<div align="center">REMARKS</div>

This Amendment is in response to the Office Action dated March 20, 2007, in which claims 1-2 and 5-20 were rejected. Applicants respectfully request reconsideration and allowance of all pending claims in view of the above-amendments and the following remarks.

I.   ABSTRACT

The abstract was objected to since the title of the application appeared on the original abstract sheet. With this amendment, a replacement abstract is submitted in which the title has been removed. Applicants therefore respectfully request that the rejection to the specification be withdrawn.

II.   CLAIM REJECTIONS UNDER §102

Claims 1-2, 5-8, 15-20 and 9-14 were rejected under §102(e) as being anticipated by Rojas et al., U.S. Publication No. 2004/0015666 A1.

However, claims 3-4 were indicated as being allowable if rewritten in independent form.

Accordingly, independent claim 1 is amended to include the elements of allowable dependent claim 3. Accordingly, independent claim 1 is now believed to be in condition for allowance.

Similarly, independent claims 9 and 15 are amended to include limitations similar to those incorporated into independent claim 1, from dependent claim 3. Thus, claims 9 and 15 are also believed to be in condition for allowance.

In addition, the respective dependent claims of each independent claim are believed to be in condition for allowance due to their dependencies on allowable independent claims.

III.   CLAIM REJECTIONS UNDER §101

Claims 9-20 were rejected under §101 as allegedly producing no tangible, concrete and useful results and/or seeking patent protection on an abstract idea in a form of a computer program. Applicants respectfully disagree.

The Office Action cites the Interim Guidelines, but fails to apply the guidelines properly.

A.   Claim 9

The Office Action suggests claim 9 "merely discloses a computer program (with functional descriptive steps), producing no practical application and not defining any structural and functional interrelationship between computer programs and other claimed elements of a computer which permit the computer program functionality to be realized, thereby producing no tangible, concrete and useful results."

> 1.   Claim 9 is Statutory *per se* Since Descriptive Material is Recorded on a Computer Readable Medium

As acknowledged in the Office Action, claim 9 is directed to a computer usable medium and includes "functional descriptive material". In this context, the functional descriptive material imparts functionality when employed as a computer component.

Per the Interim Guidelines (cited by the Examiner), functional descriptive material is statutory when recorded on some computer-readable medium, since it becomes structurally and functionally interrelated to the medium and permits the function of the descriptive material to be realized.

Claim 9 expressly states that the computer readable program (which comprises the above-mentioned functional descriptive material) is embodied in the computer-readable medium. (See claim 9, lines 1-2).

Claim 9 is therefore statutory *per se*.

> 2.   Claim 9 Also Includes a Practical Application

Even if claim 9 did not specify that the computer readable program code is embodied in the computer-readable medium, claim 9 is still statutory since it is directed to a "practical application".

Per the Interim Guidelines, a claim satisfies §101 if it is directed to "a practical application", which can be identified in various ways, including:

- the claimed invention "transforms" and article or physical object to a different state or thing; or

- the claimed invention otherwise produces a useful, concrete and tangible result.

a) **Practical Application Obtained by Physical Transformation**

The program code recited in claim 9 contains numerous physical transformations, such as:

1. "splits the high frequency data stream into a plurality of signals ..."
2. "provide bits ..."
3. "provide a valid signal identifying ..."
4. "shift identified bits ...."
5. "output an output data stream ..."
6. "shift the valid signal ..."

Thus, claim 9 is directed to a practical application since it includes one or more physical transformations.

b) **Practical Application That Produces a Useful, Concrete and Tangible Result**

Each of the physical transformations mentioned above constitutes a useful, concrete and tangible result.

For example, claim 9 specifies that the computer readable program addresses data to convert a high frequency data stream to a low frequency data stream at a desired output frequency.

A result specified by claim 9 includes outputting "an output data stream containing a plurality of valid bits of the input signal at the desired output frequency."

Clearly the output data stream is a concrete and tangible result.

This result also has usefulness, as described in the specification on page 1, lines 12-24, for example.

Thus, claim 9 is directed to a practical application since it produces a useful, concrete and tangible result.

Applicant therefore respectfully requests that the rejection of claims 9-14 under §101 be

withdrawn.

B.   Claim 15

The Office Action suggests that claim 15" calls for a seemingly patentable process but in reality the patent protection on an abstract idea in the form of a computer program as evidenced by claim 9."

The Examiner's statement is incorrect.

1.   The Claimed Process Can Be Performed in Software or Hardware

As evidenced in claims 1 and 9, the process recited in claim 15 can be performed in software or hardware, for Example.

The specification illustrates an example of a signal conversion <u>circuit</u> for performing the claimed process.

The specification also states on page 20, lines 6-12 that the process can be "carried out in a computer or processor operating under control of a computer readable program containing code that is stored on a computer readable medium . . .." See also, page 8, lines 9-12, for example.

Thus, the Examiner's statement that claim 15 merely seeks protection in the form of a computer program is incorrect.

2.   Claim 15 Includes a Practical Application

Claim 15 is also statutory since it is directed to a "practical application".

a)   **Practical   Application   Obtained   by   Physical   Transformation**

Like claim 9, the process recited in claim 15 contains numerous physical transformations, such as:

1.   "<u>splitting</u> the input data stream into a plurality of split signals ..."

2.   "<u>providing a valid signal</u> identifying ..."

3.   "<u>shifting</u> valid bits of the respective split signal ...."

4.   "<u>shifting</u> the valid signal ...."

5.   "<u>outputting</u> an output data stream ..."

Thus, claim 15 is directed to a process having a practical application since it includes numerous physical transformations.

b)   **Practical Application That Produces a Useful, Concrete and Tangible Result**

Further, each of the physical transformations mentioned above constitutes a useful, concrete and tangible result.

For example, claim 15 specifies that the process converts a phase or frequency of an input data stream to a desired output phase or frequency.

A result specified by claim 15 includes "outputting an output data stream containing a plurality of the valid bits of the input signal at the desired output frequency."

Clearly the output data stream is a concrete and tangible result.

This result also has usefulness, as described in the specification on page 1, lines 12-24, for example.

Thus, claim 15 is directed to a practical application since it produces a useful, concrete and tangible result.

Applicant therefore respectfully requests that the rejection of claims 15-20 under §101 be withdrawn.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

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